Contents

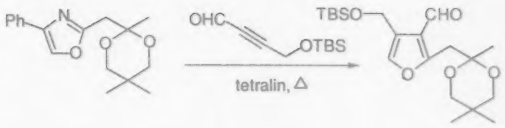
1 Preface by George R. Pettit
3 Biographical Data
10 Publications
35 Communications
123 Papers
457 Notes
613 Reviews
743 Indexes

■ Celebration of James P. Kutney

1 Preface by George R. Pettit
3 Biographical Data
10 Publications

■ COMMUNICATIONS

35 A Regioselective Route to 2,3,4-Trisubstituted Furans
Ivan Efremov and Leo A. Paquette*



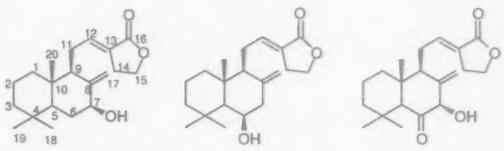
1,2,3-Trisubstituted and Stannylated Furans Oxazole Hetero Diels-Alder Reaction Bisfuran Pd(0) Coupling

39 A New Route to (-)-Aphanorphine Using a Dioxabicyclo[3.2.1]octane Chiral Building Block
Adel S. ElAzab, Takahiko Taniguchi, and Kunio Ogasawara*

(-)-sugar block (-)-aphanorphine

Chiral Building Block Aphanorphine Fischer Indolization Dioxabicyclo[3.2.1]octane Norbenzomorphan

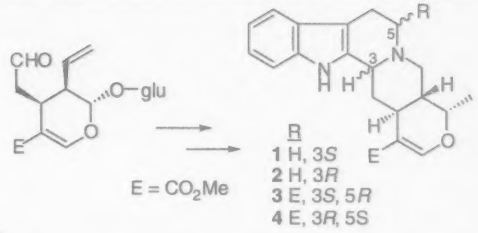
45 Antiinflammatory Principles and Three New Labdane-Type Diterpenes, Hedychilactones A, B, and C, from the Rhizome of *Hedychium coronarium* Koeng
Hisashi Matsuda, Toshio Morikawa, Yasuko Sakamoto, Iwao Toguchida, and Masayuki Yoshikawa*



hedychilactone A hedychilactone B hedychilactone C

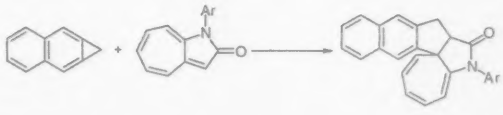
Hedychilactone *Hedychium coronarium* Antiinflammatory NO Production Inhibitor Zingiberaceae

51 Short Stereoselective Syntheses of (-)-Ajmalicine, (-)-3-Iso-ajmalicine and Their 5-Methoxycarbonyl Derivatives from Secologanin
Richard T. Brown,* Bukar E. N. Dauda, Simon B. Pratt, and Paul Richards



Aglucone Rearrangement Stereoselectivity Indole Alkaloid

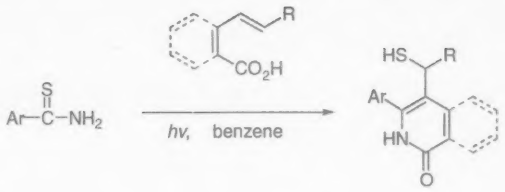
59 [2π + 2σ] and [8π + 2σ] Types Cycloaddition Reactions of Aza-, Thio-, and Thiaza-azulen-2(1*H*)-one Derivatives with Naphtho[*b*]cyclopropene: Effects of Solvents and Ytterbium Complex
Katsuhiro Saito,* Naoko Ito, and Shinichi Ando



Cyclopropene Ionic Process Concerted Process Hammett's Plot Molecular Orbital

69 **2-Pyridone Ring Formation through the Photoreaction of Arenecarbothioamides with Unsaturated Carboxylic Acids**

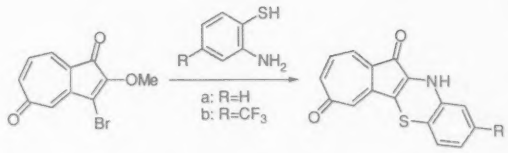
Kazuaki Oda,* Rikiji Nakagami, Naozumi Nishizono, and Minoru Machida



Photochemistry Aromatic Thioamide 2,4-Hexadienoic Acid Thietane

73 **Synthesis of Heterocycle-annulated Azulenequinone Derivatives**

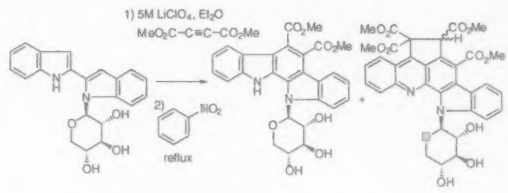
Hidetsugu Wakabayashi,* Seiichi Matsumaru, Teruo Kurihara, and Masafumi Yasunami



Azulenoid Heterocycle-annulated Azulenequinone 1,5-Azulenequinone Bromine-Oxidation Azulenobenzothiazine

81 **Short Step Syntheses of Indolo[2,3-*a*]-carbazoles Carrying an Alkyl, Allyl, or a Glycosyl Group at the 11-Position and a Novel 6,7-Dihydro-13*H*-cyclopentano-[*mn*]indolo[3,2-*c*]acridine Derivative**

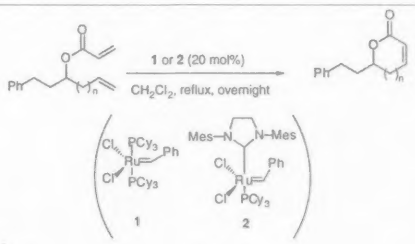
Masanori Somei,* Fumio Yamada, Jun Kato, Yoshiaki Suzuki, and Yoshinori Ueda



Indigo 1-Acetyl-2,3-dihydro-2,2'-biindolyl 1-(β-D-Xylopyranosyl)melatonin 1-(β-D-Xylopyranosyl)-2,2'-biindolyl Diels-Alder Reaction

85 **Ring Closing Metathesis Reaction of Dienes with Acrylate Moiety Leading to 5- to 7-Membered Lactones and Cyclization to 14-Membered Rings**

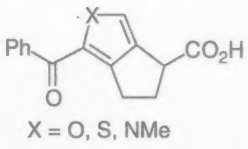
Katsuyuki Nakashima, Masashi Imoto, Takuo Miki, Takahiro Miyake, Norihiro Fujisaki, Shiori Fukunaga, Reiko Mizutani, Masakazu Sono, and Motoo Tori*



Ruthenium Catalyst α,β-Unsaturated Lactone Trisubstituted Alkene

91 **Synthesis and Biological Evaluation of Ketorolac Analogs**

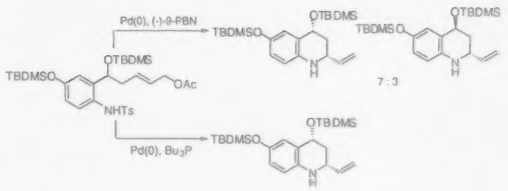
Francisco J. Lopez,* Mary-Frances Jett, Joseph M. Muchowski, Dov Nitzan, and Counde O'Yang



Regioselective Copper-mediated Closure Antinociceptive Anti-inflammatory

97 **Asymmetric Synthesis of Tetrahydroquinoline Derivative, a Building Block of Martinellines, *via* Intramolecular Allylic Amination Using 9-PBN**

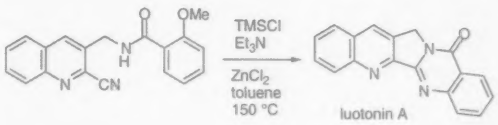
Yasumasa Hamada,* Iyo Kunimune, and Osamu Hara



Pd Catalyzed Cyclization Chiral Monodentate Phosphine Reagent Controlled Manner

101 **Three-Step Total Synthesis of Pyrroloquinazolinoquinoline Alkaloid, Luotonin A, by Intramolecular Hetero Diels-Alder Reaction**

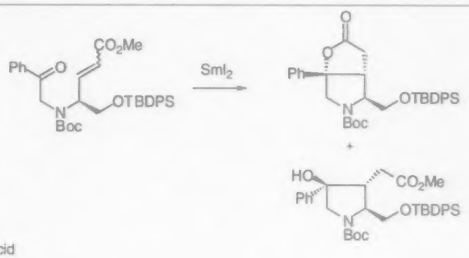
Masahiro Toyota,* Chiyo Komori, and Masataka Ihara*



Peganum nigellastrum Cytotoxic Nothapodytine B Quinazolinone Cycloaddition

105 **Formal Synthesis of FPA, a Kainoid Amino Acid, *via* Ketyl Radical Cyclization**

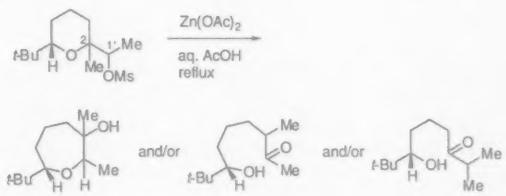
Mitsuru Kamabe, Takayuki Miyazaki, Kimiko Hashimoto,* and Haruhisa Shirahama*



Samarium Iodide Proton Donor Stereochemistry Acromelic Acid

113 **Rearrangement Reaction of 2-Methyltetrahydropyrans Having a C1'-Mesyloxy Group on the C2-Side Chain with Zinc Acetate: Ring Expansion and Ring Opening Reactions**

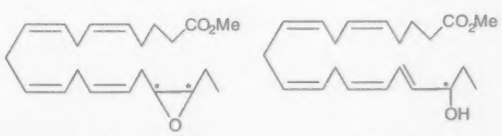
Yasuharu Sakamoto, Mina Koshizuka, Hiroyuki Koshino, and Tadashi Nakata*



Cyclic Ether Oxepane Stereoselectivity Stereospecificity

119 **Preparation of Enantiomers of 17-Epoxy Eicosapentaenoic Acids and Their 18-Hydroxy Derivatives**

Tadahiro Kato,* Toshio Nakai, Rumiko Ishikawa, and Yukiko Iio



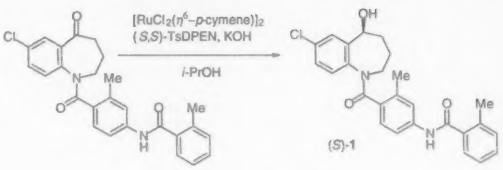
(17*S*, 18*R*)-epoxy EPA
(17*R*, 18*S*)-epoxy EPA

18-hydroxy EPA

Optical Resolution NBS-H_2O Oxidation Kusumi-Moscher Method Lipase PS Epoxide Ring Opening

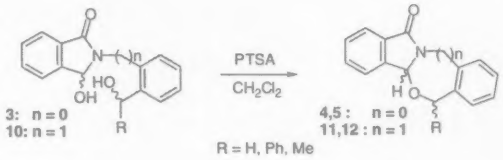
■ PAPERS

123 Practical Synthesis of Both Enantiomers of Vasopressin V_2 Receptor Antagonist OPC-41061 Using the Catalytic Asymmetric Hydrogenation
Hiroshi Yamashita,* Tadaaki Ohtani, Seiji Morita, Kenji Otsubo, Keizo Kan, Jun Matsubara, Kazuyoshi Kitano, Yoshikazu Kawano, Minoru Uchida, and Fujio Tabusa



Aquaretic Agent Ketone Reduction Enantioselectivity Ruthenium-Catalyst

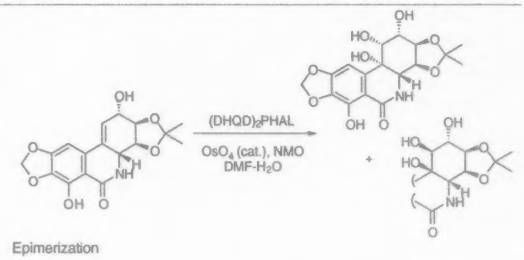
129 Intramolecular Addition of a Hydroxyl to an *N*-Acyliminium System. Application to the Synthesis of Isoindolo[2,1-*a*][3,1]-benzoxazine and Isoindolo[1,2-*c*][2,4]-benzoxazepine Derivatives
Pascal Pigeon, Jana Sikoraiova, Stefan Marchalin, and Bernard Decroix*



Stereoselectivity Cyclization

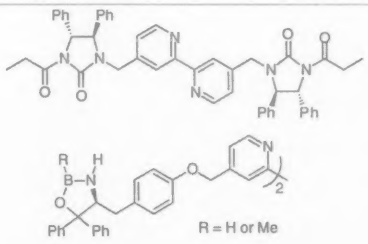
139 Synthesis of 10b(*R*)-Hydroxy-pancratistatin, 10b(*S*)-Hydroxy-1-epipancratistatin, 10b(*S*)-Hydroxy-1,2-diepipancratistatin and Related Isocarbostyrils
George R. Pettit,* Noeleen Melody, Delbert L. Herald, Jean M. Schmidt, Robin K. Pettit, and Jean-Charles Chapuis

and



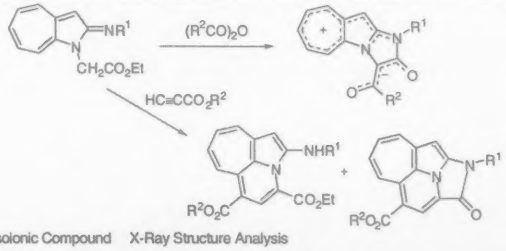
Pancratistatin Narciclasine Stereoisomer Hydroxylation Epimerization

157 Synthesis of C_2 Symmetric 2,2'-Bipyridyl Imidazolidinone and Oxazaborolidine Derivatives
Robert S. Ward,* Denis Branciard, Rosemary A. Dignan, and Martyn C. Pritchard



Asymmetric Alkylation Asymmetric Reduction

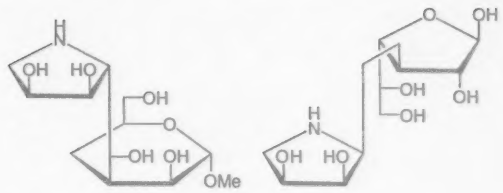
171 Synthesis and Some Reactions of Ethyl (2-Alkylimino-1,2-dihydro-1-azaazulen-1-yl)acetates
Noritaka Abe,* Yasutaka Fukumoto, Hiroyuki Fujii, and Akikazu Kakehi



Fused 1-Azaazulene Derivative Cycloaddition *N*-Ylide Mesoionic Compound X-Ray Structure Analysis

181 **Synthesis of (1→3)-C and Homo-(1→3)-C-linked Imino-disaccharides Starting from Levoglucosenone and Isolevoglucosenone**

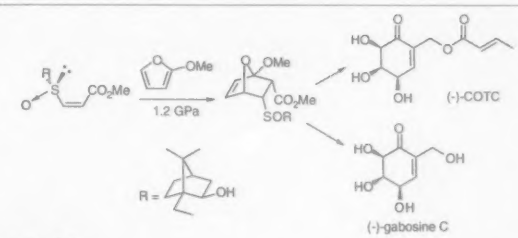
Christian Marquis, Francesca Cardona, Inmaculada Robina, Gaby Wurth, and Pierre Vogel*



Disaccharide Mimics Azasugar Aldol Reaction Oshima-Nozaki Condensation Anhydroaldose

209 **High-Pressure Mediated Asymmetric Diels-Alder Reaction of Chiral Sulfinylacrylate Derivatives and Its Application to Chiral Synthesis of (-)-COTC and (-)-Gabosine C**

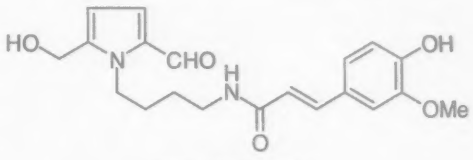
Tamiko Takahashi,* Yoko Yamakoshi, Kazuya Okayama, Junko Yamada, Wei-Ying Ge, and Toru Koizumi



2-Methoxyfuran *endo* Cycloadduct *s-trans* High Diastereoselectivity

221 **Total Synthesis of Magnolamide**

Ying Dong and Philip W. Le Quesne*

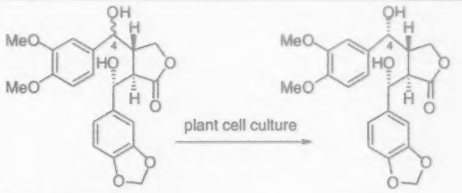


magnolamide **8**

Alkaloid Pyrrole Condensation Natural Product

227 **Enzyme-catalyzed Dediastereomerization of Dibenzylbutanolides by Plant Cell Cultures**

Masumi Takemoto,* Yuki Matsuoka, Kiyoshi Tanaka, Kazuo Achiwa, Nikolay Stoynov, and James Peter Kutney*



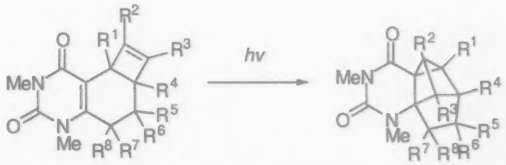
a mixture of 4*R** and 4*S** (1:1 ratio)

4R* 80%, 100% de

Dediastereomerization Enzyme Lignan

235 **Synthesis of 9,11-Diazapentacyclo-[6.4.0.0^{1,3}.0^{2,5}.0^{4,8}]dodecane-2,4-diones**

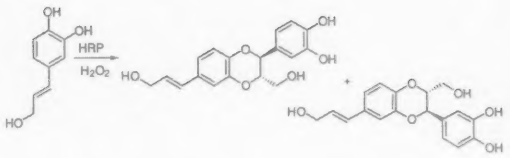
Kazue Ohkura, Ken-ichi Nishijima, Yuji Kuge, and Koh-ichi Seki*



Photoreaction [2+2] Cycloaddition Cyclobutaquinazoline Quinazoline Single Crystal X-Ray Analysis

245 Biomimetic Syntheses of Neurotrophic Americanol A and Isoamericanol A by Horseradish Peroxidase (HRP) Catalyzed Oxidative Coupling

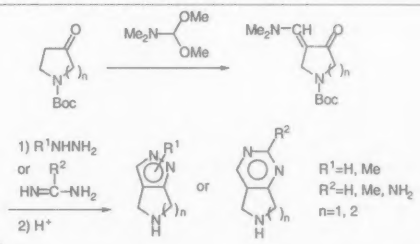
Hironobu Takahashi, Keiji Matsumoto, Masumi Ueda, Youko Miyake, and Yoshiyasu Fukuyama*



1,4-Dibenzodioxane Caffeic Acid 3,4-Dihydroxycinnamyl Alcohol

257 Synthesis of the Bicyclic Secondary Amines *via* Dimethylaminomethylene Ketones from 3-Pyrrolidone and 4-Piperidone

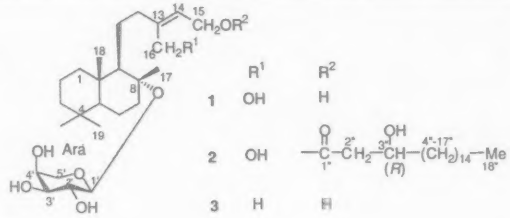
Hideto Fukui,* Kiyoshi Inoguchi, and Jun Nakano



Antibacterial Fluoroquinolone Cyclic Amine Pyrazole Pyrimidine

265 Three New Labdane Diterpenoid Glycosides from *Conyza blinii*

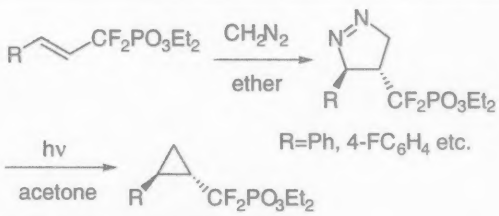
Yanfang Su, Kazuo Koike, Dean Guo,* Jinke Jia, Jiansheng Liu, Junhua Zheng, and Tamotsu Nikaido*



Blinoside A Blinoside B *Conyza blinii* Asteraceae Labdane

273 1,3-Dipolar Cycloaddition of Diazomethane to 1,1-Difluoroallylphosphonates: Application to Synthesis of Cyclopropane Derivatives Having a Diethoxyphosphoryldifluoromethylene Unit

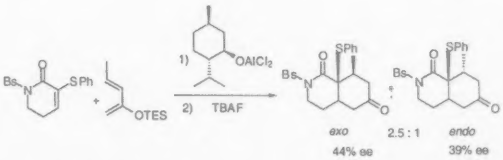
Tsutomu Yokomatsu,* Kenji Suemune, Tetsuo Murano, and Shiroshi Shibuya



1,3-Dipolar Cycloaddition Diazomethane 1,1-Difluoroallylphosphonate Pyrazoline Cyclopropane Derivative

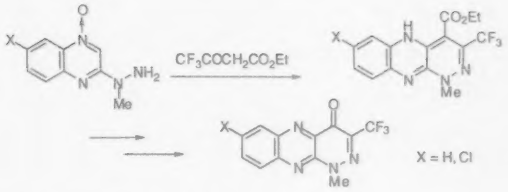
283 Studies on the Asymmetric Diels-Alder Reaction of Dihydropyridin-2-one with Silyloxydienes

Masamichi Yamanaka, Toshiaki Nagata, Yoshino Nakajima, Atsushi Nishida, and Masako Nakagawa*



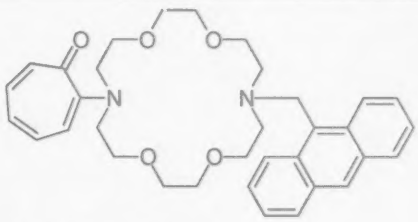
Manzamine A Dynemicin A Hydroisoquinoline Menthol Aluminum Reagent

291 Qinolone Analogues 4. Synthesis of 1-Methyl-3-trifluoromethylpyridazino-[3,4-*b*]quinoxalin-4(1*H*)-ones
Yoshihisa Kurasawa,* Izumi Matsuzaki, Waka Satoh, Yoshihisa Okamoto, and Ho Sik Kim



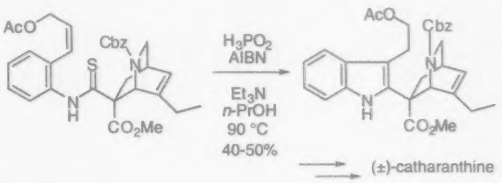
Quinoxaline *N*-Oxide Oxidation Nitrous Acid Sodium Bromate Ethyl 4,4,4-Trifluoroacetoacetate

305 Synthesis and Complexation Behavior of Diaza-18-crown-6 Having Troponyl and Anthryl Groups
Emi Yamamoto, Kanji Kubo,* and Akira Mori*



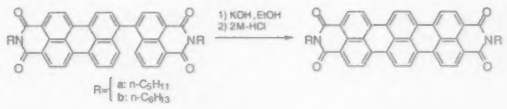
Fluoroionophore Chromoionophore Photoinduced Electron Transfer Diazacrown Ether Tropone

313 Synthesis of 2,3-Disubstituted Indoles by Radical Cyclization with Hypophosphorous Acid and Its Application to Total Synthesis of (±)-Catharanthine
Matthew T. Reding, Yosuke Kaburagi, Hidetoshi Tokuyama, and Tohru Fukuyama*



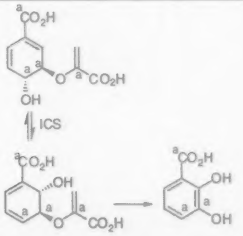
Tin-free Radical Condition 2-Alkenylthioanilide Radical Reaction in Aqueous Media Quinoline Isoquinuclidine

331 Synthesis and Properties of Terrylenedicarboximide Derivatives
Yukinori Nagao,* Hironobu Iwawaki, and Kozo Kozawa



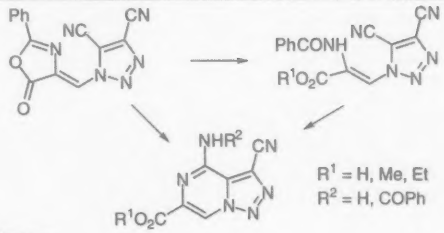
Coupling Stannylperylene Absorption Spectra Thermal Stability Fluorescence Spectra

341 Biosynthesis of 2,3-Dihydroxybenzoic Acid in Transgenic *Catharanthus roseus* Cell Cultures Overexpressing Isochorismate Synthase
Retno A. Budi Muljono, Julian R. Talou, Johannes J. C. Scheffer, and Robert Verpoorte*



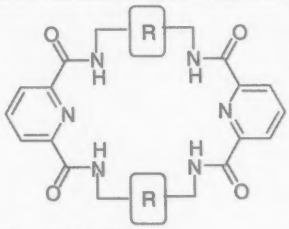
Isochorismate Pathway [1-^{13}C]Pyruvate Feeding Transgenic Plant

353 **A Novel Approach to [1,2,3]-Triazolo[1,5-*a*]pyrazines**
Tjaša Jug, Matjaž Polak, Tomaž Trček, and Bojan Verček*



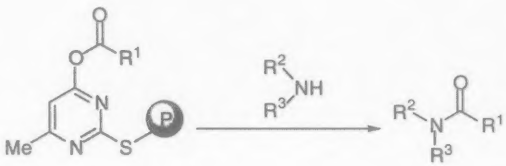
Pyrazine, Fused 1,2,3-Triazole Cyclization Tautomerism Hydrolysis

361 **The Synthesis and Structure of Macrocyclic Pyridinophanes—Potential Anion Receptors**
Agnieszka Szumna, Daniel T. Gryko, and Janusz Jurczak*



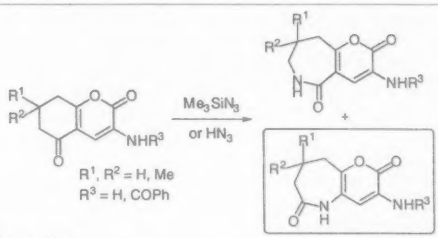
Pyridinophane Macrocyclic Dilactam X-Ray Analysis Conformational Analysis Anion Complexation

369 **New Solid-supported Reagents (SSRs) for Selective Acylation of Amines**
Maurizio Botta,* Federico Corelli,* Elena Petricci, and Catia Seri



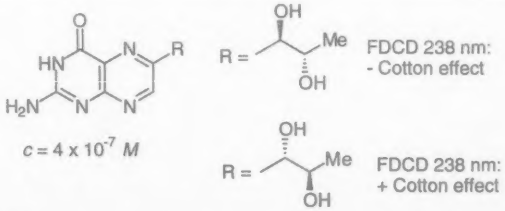
Solid-supported Reagent Pyrimidinone *N*-Acylation Combinatorial Synthesis

379 **Regioselectivity in the Schmidt Reaction: First Synthesis of Pyrano[3,2-*b*]azepines**
Franc Požgan, Slovenko Polanc, and Marijan Kočevar*



Pyrano[3,2-*c*]azepine Pyrano[3,2-*c*]pyridine Lactone Lactam Benzamide

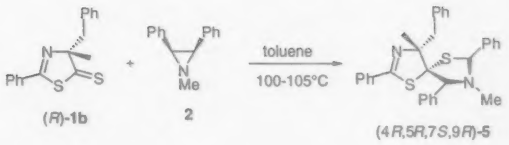
387 **A Highly Sensitive and Specific FDCD Method for Chirality Analysis of Naturally Occurring Pteridines**
Ning Chen, Kazuhisa Ikemoto, Takashi Sugimoto, Shizuaki Murata,* Hiroshi Ichinose, and Toshiharu Nagatsu



Absolute Configuration Biopterin Fluorescent Spectra Neopterin

393 **Stereoselective 1,3-Dipolar Cycloaddition of an Azomethine Ylide with a Chiral 1,3-Thiazole-5(4*H*)-thione**

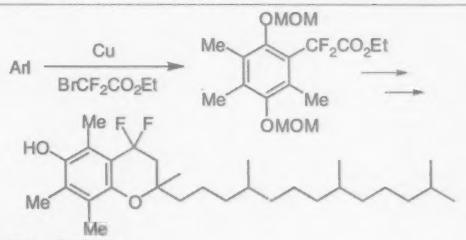
Andreas Gebert, Anthony Linden, Grzegorz Mlostoń, and Heinz Heimgartner*



Cycloaddition Azomethine Ylide Stereoselectivity 1,3-Thiazole-5(4*H*)-thione

403 **Synthesis of 4,4-Difluoro-α-tocopherol Using a Cross-Coupling Reaction of Bromodifluoroacetate with Aryl Iodide in the Presence of Copper Powder**

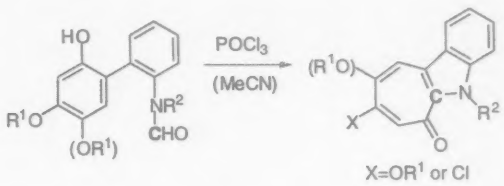
Kazuyuki Sato, Takashi Nishimoto, Kei Tamoto, Masaaki Omote, Akira Ando, and Itsumaro Kumadaki*



Ethoxycarbonyldifluoromethylcopper Fluorine Vitamin E Chromanol Cyclization

413 **Further Approaches to Anomalous Carbon Insertion into a Benzene Ring in the Bischler-Napieralski Reaction of Phenolic 2-Phenylformanilides**

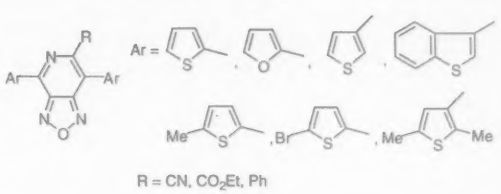
Tomoko Narioka and Tsutomu Ishikawa*



Ring Expansion Substitution Effect *ipso* Attack Azaazelene

421 **Preparation of 4,7-Dihetaryl-1,2,5-oxadiazolo[3,4-*c*]pyridines as Red Fluorescent Materials**

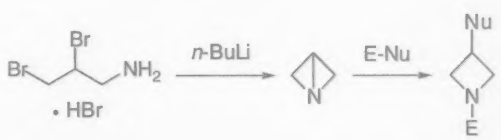
Hideki Gorohmaru, Thies Thiemann, Tsuyoshi Sawada, Kazufumi Takahashi,* Katsumi Nishi-i, Naoko Ochi, Yoshio Kosugi, and Shuntaro Mataka*



UV/VIS Spectrum Red Fluorescence OLED Dopant

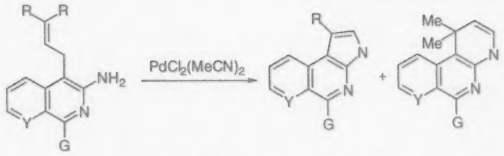
433 **Synthesis of Azetidine Derivatives Using 1-Azabicyclo[1.1.0]butane**

Kazuhiko Hayashi, Shinsuke Hiki, Toshio Kumagai, and Yoshimitsu Nagao*



1-Azabicyclo[1.1.0]butane Azetidine Substitution 1β-Methylcarbapenem Radical

443 **Convenient Synthesis of 3*H*-Pyrrolo-[2,3-*c*]isoquinolines and 3*H*-Pyrrolo-[2,3-*c*][1,7]-, 3,4-Benzo[*c*][1,7]-, and Dihydropyrido[4,3-*c*][1,8]naphthyridines *via* Palladium-assisted Nucleophilic Amination**
U. Narasimha Rao and Edward R. Biehl*

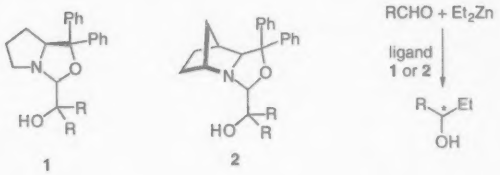


R = H, Me; Y = CH, N; G = heterocyclic saturated ring or alkyl

Hegedus Coupling Palladium Catalyst Amination Intramolecular Addition

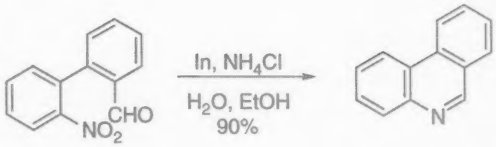
NOTES

457 **New Chiral Pyrrolidinyl- and 2-Azanorbornyloxazolidine Ligands for Enantioselective Addition of Diethylzinc to Aldehydes**
Hiroto Nakano,* Yuko Okuyama, Kazuyuki Fushimi, Ryo Yamakawa, Daisuke Kayaoka, and Hiroshi Hongo*



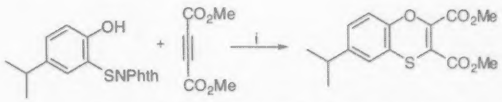
Pyrrolidinylmethanol 2-Azanorbornylmethanol β-Amino Alcohol Optically Active Secondary Alcohol Catalytic Asymmetric Reaction

467 **Indium-mediated Reductive Cyclizations in Aqueous Ethanol: Highly Efficient Synthesis of Heterocyclic Compounds of Biological Interests**
Bimal K. Banik,* Indrani Banik, Linda Hackfeld, and Frederick F. Becker



Indium Cyclization Heterocycle Biological Significance

471 **[4+2] Cycloadditions of *o*-Thioquinones with Alkynes and Arylalkenes: a Facile Synthesis of Benzoxathiins**
Vijay Nair* and Bini Mathew

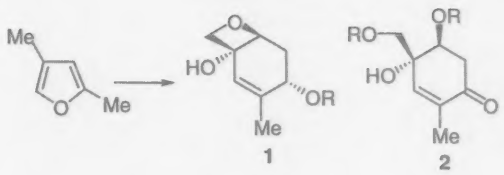


i. Py, $CHCl_3$, sealed tube, 70 °C, 15 h, 92%

o-Thioquinone Diels-Alder Reaction Alkyne Arylalkene

479 Synthesis of Modified Analogues of Taxol C,D Subunits from Furan

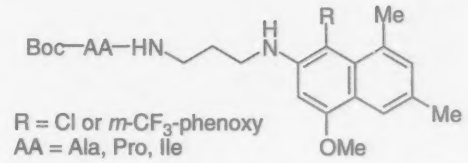
Odón Arjona, María L. León, Roberto Menchaca, and Joaquín Plumet*



Taxoid 7-Oxanorbornene Derivative Furan

487 Synthesis of Amino Acid Derivatives of 6-Aminoquinoline Antimalarial Agents

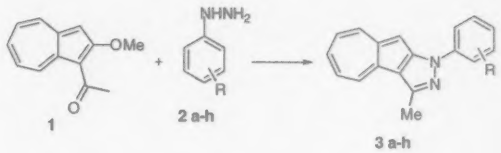
Supat Jiranusornkul,* Busaban Sirithunyalug, Hideo Nemoto, and Hiroki Takahata*



Antimalarial Agent 6-Aminoquinoline Skraup Synthesis Amino Acid Reductive Amination

497 A Simple and Facile Synthesis of Azuleno[1,2-*d*]pyrazoles from 1-Acetyl-2-methoxyazulene

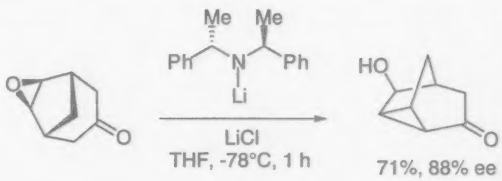
Dao-Lin Wang and Kimiaki Imafuku*



Azulene Phenylhydrazine Pyrazole Formation Pyrazoloazulene

503 Cyclopropane Ring Formation through Enantioselective Deprotonation of *Cs*-Symmetric Cycloheptenone Oxides

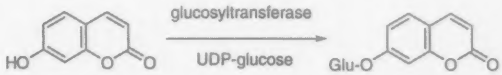
Hitoshi Abe,* Takenori Tsujino, Daisuke Tsuchida, Setsuo Kashino, Yasuo Takeuchi, and Takashi Harayama*



Epoxide Chiral Amine Asymmetric Deprotonation

509 Isolation and Characterization of UDP-glucosyltransferase in the Cultured Cells of *Nicotiana tabacum*

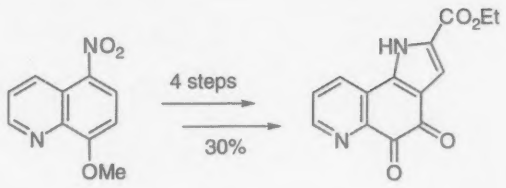
Shin-ya Yamane, Kei Shimoda, Takeshi Fujino, Shinji Ohta, and Toshifumi Hirata*



Hydroxycoumarin UDP-Glucosyltransferase Purification of Enzyme

515 Synthetic Studies on Indoles and Related Compounds 50. Improved Synthesis of 7,9-Didecarboxymethoxathine

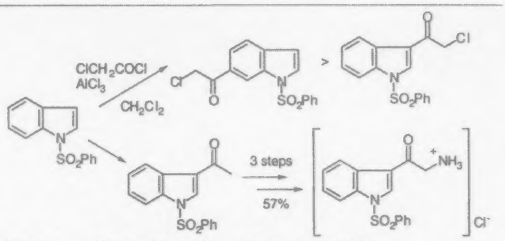
Hideharu Suzuki, Toshiko Watanabe, Yuusaku Yokoyama, and Yasuoki Murakami*



Pyrroloquinolinequinone Japp-Klingemann Reaction Fischer Indolization CAN

519 Synthesis of Non-peptidic Tryptamine Derivative (THS-12) which Stimulates TPO Responsive Cell Growth (Synthetic Studies on Indoles and Related Compounds 51)

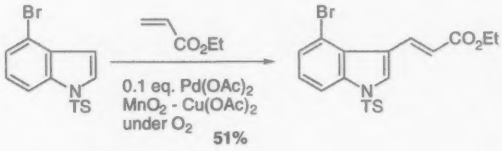
Hideharu Suzuki, Tomoko Furukawa, Chiaki Yamada, Ichiro Shibuya, Masateru Kurumi, Tetsuo Yokoyama, and Yasuoki Murakami*



Thrombocytepenia Thrombocyte Growth Factor Friedel-Crafts Acylation 1-Phenylsulfonylindole Chloroacetyl Chloride

525 A Study for Palladium-catalyzed Chemoselective Vinylation at C-3 Position of 4-Bromo-1-tosylindole

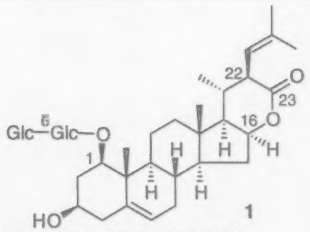
Yuusaku Yokoyama,* Kazuhiro Tsuruta, and Yasuoki Murakami*



Heck Reaction Chloranil Palladium Acetate Oxidant

531 A Novel Rearranged Cholestane Glycoside with a δ-Lactone Ring System from *Ornithogalum saundersiae* Bulbs

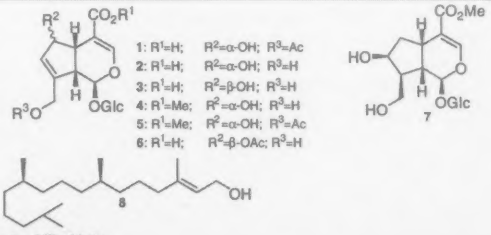
Minpei Kuroda, Yoshihiro Mimaki,* Hiroyuki Koshino, and Yutaka Sashida



Ornithogalum saundersiae Liliaceae Rearranged Cholestane Glycoside δ-Lactone Ring Selective PFG-HMBC

537 Studies on the Constituents of Indonesian *Borreria latifolia*

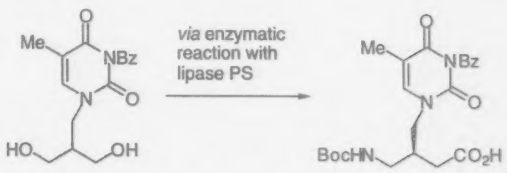
Kohei Kamiya, Yasuhiro Fujita, Yasuhisa Saiki, Endang Hanani, Umar Mansur, and Toshiko Satake*



Rubiaceae Iridoid Glycoside Asperulosidic Acid Phytol Structural Elucidation

545 Chemo-enzymatic Synthesis of Novel β-Amino Acids Substituted by (Thymin-1-yl)methyl Functional Group at the α-Position

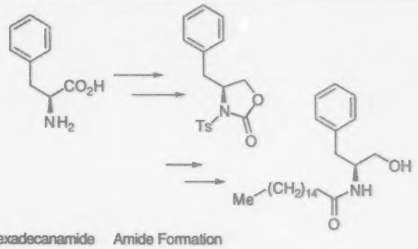
Tsutomu Yokomatsu,* Ken Takada, Akihito Yasumoto, Yoko Yuasa, and Shiroshi Shibuya



β-Amino Acid Peptide Nucleic Acid Lipase Desymmetrization 1,3-Propanediol

553 Model Studies toward Scyphostatin: Synthesis of (*S*)-4-Benzyl-3-(*p*-toluenesulfonyl)-2-oxazolidinone and Its Effective Transformation to (*S*)-*N*-(1-Benzyl-2-hydroxyethyl)-hexadecanamide

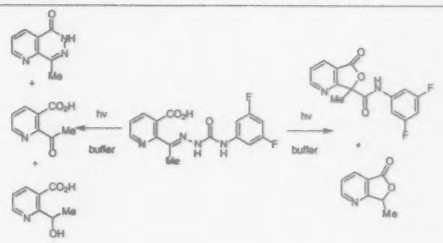
Takashi Izuhara, Wakako Yokota, Munenori Inoue, and Tadashi Katoh*



Scyphostatin Neutral Sphingomyelinase Inhibitor Oxazolidinone Hexadecanamide Amide Formation

561 Aqueous Photolysis of ^{14}C-BAS 654 H under Artificial Sunlight

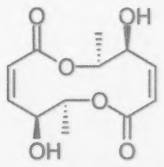
Mahatam Singh,* Connie Mills, and Dave G. Bolin



Irradiation Urea, Substituted Naturallight Buffer Radiolabel

581 A Novel Dimeric Lactone Bis-osmundalactone from the Japanese Inedible Mushroom *Paxillus atromentosus* var. *bambusinus*

Toshihiro Hashimoto, Takayuki Arakawa, Masami Tanaka, and Yoshinori Asakawa*

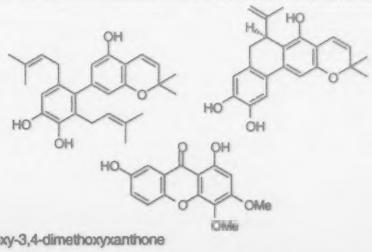


bis-osumundalactone

Basidiomycetes Fungus Osmundalactone Dimer NMR Spectrum C_2-Symmmetrical Structure Absolute Structure

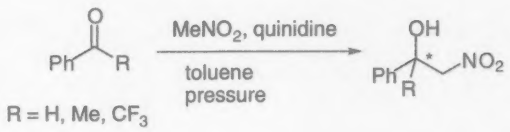
589 A Biphenyl, a Dihydrophenanthrene and a Xanthone from *Clusia paralycola*

Franco Delle Monache,* Giuliano Delle Monache, Bruno Botta, and Eszter Gacs-Baitz



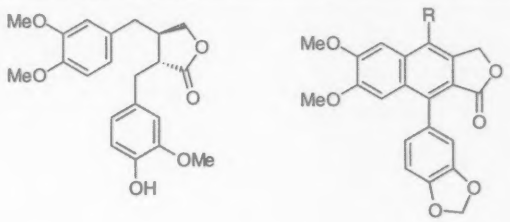
Chromene Derivative Isopropenyl Substituent Biogenesis 1,7-Dihydroxy-3,4-dimethoxyxanthone

599 High Pressure Mediated Asymmetric Henry Reaction of Nitromethane with Carbonyl Compounds Catalyzed by Cinchona Alkaloids
Yukihiro Misumi, Robert A. Bulman, and Kiyoshi Matsumoto*



Henry Reaction Asymmetric Reaction High Pressure Effect Nitro Alcohol Cinchona Alkaloid

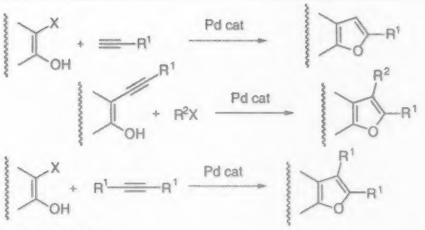
607 Production of Lignans by *Haplophyllum patavinum in vivo* and *in vitro*
Lucia Puricelli, Gabbriella Innocenti, Sonia Piacente, Rosy Caniato, Raffaella Filippini, and Elsa M. Cappelletti*



Rutaceae Arctigenin Justicidin Diphyllin Tuberculatin

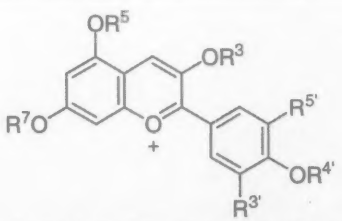
■ REVIEWS

613 Palladium Catalysis in the Construction of the Benzo[*b*]furan and Furan Rings from Alkynes and Organic Halides or Triflates
Sandro Cacchi,* Giancarlo Fabrizi, and Antonella Goggiomani



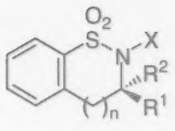
Cyclization Coupling Reaction Domino Reaction Carbopalladation Oxypalladation

633 Recent Progress in the Chemistry of Polyacylated Anthocyanins as Flower Color Pigments
Toshio Honda* and Norio Saito



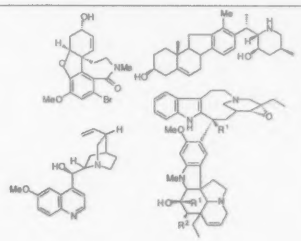
Anthocyanin, Polyacylated Flower Color Pigment Spectroscopy on Anthocyanin Stabilization of Flower Color Bluing of Flower Color

693 **Benzosultams: Synthesis and Applications**
Zhaopeng Liu and Yoshio Takeuchi*



N-Fluorosultam Sulfonamide Chiral Auxiliary Asymmetric Synthesis

711 **Biotransformations of Alkaloids: A Challenge**
Wolf-Rainer Abraham* and Grigor Spassov



Bioconversion Galanthamine Indole Quinoline Steroid

■ **INDEXES**

743 **Author Index**
757 **Subject Index**